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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

P R E L I M I N A R Y R E P O R T

INSECT CONTROL PROJECT

Spring 1928

Beaverhead & Deerlodge

National Forests

Montana



District 1
Missoula, Montana
July 15, 1928

C. S. Webb
In Charge

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Mr. Enander (3)

Beaverhead

Deerlodge

Bitterroot

W. J. White

C. H. Webb.

In Charge

This report is submitted as a rather brief account of the Insect Control Project carried out on the Beaverhead, and Deerlodge National Forests during April, May, June, and July of 1928. The report is intended only as a preliminary one since a complete and accurate report cannot be made at this time. Vouchers are not all through and books closed. Cost figures and production records are not completely worked up, and the figures given in this report are subject to slight changes in the final report.

It is the plan of Associate Entomologist J. C. Evenden and myself to combine our final reports and make one complete report on the project, at the same time submitting such plans and recommendations as we have for further work next season. It is believed desirable that this be delayed until the season of most active field work has passed, the survey by the Bureau of Entomology completed over the area and the report be then prepared and submitted by December 15, 1928.

There was considerable property and tools stored at Wisdom, which had been in use the previous season. This had to be repaired and tools put in shape. About April 10 we commenced trucking in additional equipment and supplies for this season's work. I, therefore, went to Wisdom, April 10, with four men, rented office and additional warehouse room and opened up a central office and warehouse. The balance of the month of April was spent in establishing office, warehouse facilities, putting equipment in shape, trucking in equipment and supplies from Divide, hauling hay to several campsites and hauling out camp equipment for eight camps to points where it could be stored and located close by when later needed. Weather conditions were extremely bad all through April.

The first two camps to commence treating trees were at Steele Creek and Francis Creek on the east side of the Basin. These commenced May 1. Weather conditions changed for the better the first part of May and the moving out and establishing of camps progressed very well. Upon May 25, the maximum of 25 camps, employing about 450 men, including Forest officers, were established. These were kept fully manned and supplied up to June 13 at which time it

appeared necessary to commence releasing men on account of exhaustion of available funds. The pulling of camps commenced June 13 and by June 21 the men were all released at camps, the only ones remaining being a few necessary for the hauling in and warehousing of equipment and supplies.

The work was started this season as soon as thawing of snow would permit. After the snow commenced to go off, it went so rapidly, however, we were not able to get camps placed on desired areas as fast as the snow disappeared, but hurried them along as rapidly as possible. The work was pushed strongly from start to finish. It, perhaps, might have proved a little more economical and practicable if it had not been pushed quite so rapidly, thus carrying the work along closer to the end of June. I could not, however, overlook the fact that we might possibly encounter very adverse weather conditions or labor conditions during the life of the job. If we should, it was quite possible the whole allotment might not be spent and the maximum amount of trees treated. My experience, the season previous, showed we had extremely bad weather conditions all during May and bad labor conditions the latter half of June. On account of this I felt it better to push the job as hard as I could right from the start.

Practically all of the equipment and supplies, about four carloads, were hauled from Divide to Wisdom by truck. Divide is a station on the Butte-Pocatello line of the Oregon Short Line. From Divide to Wisdom is 55 miles. Roads were very bad most of the time, since this stuff had to be hauled in early at the time snow was melting and frost going out of the ground. After May 25, the Bitterroot-Big Hole road was open over the Continental Divide, and from that time the food supplies and men needed were transported over that way from the Bitterroot Valley and Missoula.

Approximately 100 horses were employed when the work was at its maximum height. There were used four pack strings having a total of 32 head, 60 skidding horses and a few other horses used in team work and as saddle horses.

The truck hauling of men, equipment and supplies to and from outside points was contracted. The hauling out of Wisdom to the camps ranged from 6 to 30 miles

in distance. This was done with four-horse teams up to about May 5 when two Government-owned trucks were put into service and teams were used but little thereafter. One or two trucks were hired occasionally to fill in on trips when the volume of work became too great to be handled by the two Government trucks. Two Ford 1/4-ton trucks, one Chevrolet car, and one Star car were also in almost constant use in the overhead supervision work, and for light supply trips.

Wisdom, Montana, was selected as the central point from which to handle the job. The central office force consisted of C. S. Webb in charge, P. Neff, assisting in establishing camps and field supervision, R. W. Strong, chief clerk, C. F. Beck and Ed. Hoell, assistant clerks, handling commissary, vouchering, keeping records, purchasing and other routine office work, and A. J. Kramis in charge of the warehouse. These men are Forest officers of District 1. The two truck drivers and a couple of men working at the warehouses also made their headquarters at Wisdom. The field areas were divided into five units and each unit put directly in charge of a Forest officer on the ground. The unit managers were W. W. White, Wise River Unit, G. M. DeJarnette, East Side Unit, H. G. Peterson, Pintlar Lake Unit, Thomas Crossley, Mussigbrod Unit, and W. T. Winston, Battlefield Unit. Each unit had from four to seven camps working. The East Side and Mussigbrod Units were the heaviest with seven camps each. The men in charge of these units were D-1 Forest officers. Camps were organized, there being one spotting crew in each camp and in some camps, two for awhile. From one to six treating crews were used in various camps, the majority being two and three-crew camps. Spotting crews were made up in some instances of two men, others of three and quite a number of 5 men each. Most of the area within the east side and Wise River units was spotted by two-man crews. This depended upon the topography of country, character of timber stand and intensity of infestation. Areas containing strips and patches of mature timber intermingled with strips of young growth could be worked out with two-man crews. Large areas of solid stand old growth, where the infestation was heavy, were covered by 100% cruise with systematic stripping, and here the three and five-man crews were used exclusively.

Consideration was given to these things before starting crews. A maximum of 27 spotting crews was used.

Treating crews mostly consisted of five men and a foreman with one skidding horse. In some cases, four men were used instead of five. There were from one to six such crews in the various camps, the majority being two-crew camps with quite a few three-crew camps. About 90% of the trees treated were felled, cut into log lengths, limbed, and the infested portion (average two-log lengths) was skidded into piles and burned. The slash was disposed of by piling and burning along roads, trails and around lakes, creeks, and camp grounds where people are apt to frequent. In other places, it was lopped from the stem and left upon the ground. The remaining 10% were not cut, but were burned standing. This was accomplished by piling dry limbs, poles, and slash around the trees and burning, and in some instances by placing log decks against infested trees and burning the decks. To get a satisfactory burn on standing trees, in the latter method, required the piling of considerable slash up against the tree on the opposite side from the log pile. It was possible to treat in this way only such individuals as stood out by themselves, since to do so in the thicker stands would result in injury to thrifty trees and reproduction close by.

While there were but 25 camps in use, a number of these were moved and there were in all 37 camp settings.

I am uncertain as to the total number of trees spotted and left untreated. I think there were approximately 4,000, and as there were approximately 55,000 trees treated, the total spotted is not far from 60,000. This can be given more exact in the final report.

I would estimate there were left 15,000 infested trees within the Big Hole Basin which were not spotted. This, however, is merely a guess based on observation of myself and others. These are largely on the west side in Mussigbrod, Johnson, and Tie Creeks and at the southerly end of the basin from Miner Creek south. An allotment of

\$110,000 instead of \$93,000, which would have permitted of running 10 days longer at full force, should have resulted in cleaning up pretty well, as the output was averaging 2000 trees per day at the time we started disbanding camps.

Practically all the crew was off by June 20, except 10 or 12 men, which by June 30 had dwindled down to four, 2 office men, one warehouse man and myself, who held on to July 10, when the office was finally closed up.

There were 36 Forest officers from D-1 on the job, five from D-4, one from D-2 and one from D-6. These men were not on constantly, but the average for the period, May 10 to June 15, was approximately 40 Forest officers.

The men from other Districts were very high-class men and rendered us very material assistance in the work. The same may be said of the D-1 men. All of them worked hard and faithfully in an endeavor to make the thing as successful as possible. Associate Entomologist J. C. Evenden was on the job practically the entire month of May and a few days in June. He gave his attention particularly to the spotting work, but assisted in any other way possible. His assistance was helpful and is very much appreciated.

Central Purchase did most of the buying and putting out of bids, except for some of the strictly local purchases. The help and service rendered by Maintenance and Missoula warehouse is much appreciated. Orders were filled with promptness, courtesy and care. The goods supplied were satisfactory in every way. Errors were mighty few and such as happened were of little consequence and easily adjusted. The offices of the Beaverhead Forest at Dillon and the Deerlodge Forest at Butte helped us materially in the way of securing men and supplies needed quickly from these points and in many other ways. Their co-operation in this respect was helpful and is appreciated.

As an indication of the progress in treating, the following is given:

<u>Period</u> <u>Ending</u>	<u>Trees treated</u> <u>the week</u>	<u>Trees treated</u> <u>job to date.</u>
May 5	165	165
May 12	1,273	1,438
May 19	5,291	6,729
May 26	9,205	15,934
June 2	11,849	27,783
June 9	12,997	40,780
June 16	10,333	51,113
June 23	3,932	55,045

The trees averaged about 14" in diameter on stump and the length treated was about 30 linear feet per tree.

A brief summary of the area and trees worked on the two Forests follows:

<u>BEAVERHEAD</u>		<u>DEERLODGE</u>		<u>TOTAL</u>	
<u>Acres</u> <u>Spotted</u>	<u>Acres</u> <u>Treated</u>	<u>Acres</u> <u>Spotted</u>	<u>Acres</u> <u>Treated</u>	<u>Acres</u> <u>Spotted</u>	<u>Acres</u> <u>Treated</u>
63,120	61,380	8,680	8,500	71,800	69,880
<u>Trees</u> <u>Spotted</u>	<u>Trees</u> <u>Treated</u>	<u>Trees</u> <u>Spotted</u>	<u>Trees</u> <u>Treated</u>	<u>Trees</u> <u>Spotted</u>	<u>Trees</u> <u>Treated</u>
49,000	46,573	9,500	8,472	58,500	55,045

COSTS:

Costs ran higher again this season than was anticipated. The costs of outfitting, moving in and setting up on the job an outfit of the size used for only a short period of work is too great to permit of economical work. Not to exceed four weeks of real efficient work is experienced, the remainder of the approximate eight weeks' time, in which to do the job, is partially occupied by the building up and tearing down of the organization. Had funds been available for a full force run of 10 days more at the time we commenced tearing down (June 13), the cost over the whole would have been automatically reduced. At this time 2,000 trees were being treated per day at a cost of \$1700 per day or 85¢ per tree. Another week or

10 days at that time would have lowered costs and would have afforded a fairly good clean-up. An allotment of \$110,000 would have fitted in well with the size of organization we had, since it would have permitted running full blast to about June 25. In case work is carried on next season, under similar weather conditions, the cost should be less. This is due to the fact that about \$15,000 worth of equipment bought the past two seasons is on hand and the greatest portion is in good shape for next season. Practically all of this equipment is now stored at Wisdom, and a large item of freight charges and truck haul of 55 miles would be eliminated from the costs next season, in addition to the actual cost of the equipment.

I am unable, at this time, to give costs in detail by activities. Our activity cost sheets for the project are not yet completed insofar as the distribution of expenditures is concerned. I cannot give meal costs, payroll, horse hire, transportation, travel, forage, subsistence supplies, equipment and supplies, rent, lights, telephone, etc., at this time. A complete segregation of these costs will be given in detail in my final report above referred to so that such analysis as desired may be made.

A brief statement of total costs is given as follows:

Total Allotment F. Y. 1928-----	\$ 95,000.00
Transferred to D-4-----	150.00
	<u>\$ 94,850.00</u>
 Total Allotment F. Y. 1929-----	 2,500.00
Vouchered by Beaverhead Forest F.Y. 1928-----	1,441.95
" " Insect Control Office F.Y. 1928---	93,285.47
" " " " " F.Y. 1929---	918.26
Liabilities outstanding F.Y. 1929-----	159.71
Total Disbursements from Allotments-----	<u>\$ 95,805.39</u>
Contributed time-----	2,598.33
Total expended-----	<u>\$ 98,403.72</u>

Based on 55,045 trees, cost is \$1.79 per tree.

Total equipment and supply purchases were \$13,491.38. Of this it is figured \$11,610.45 covers

cost of equipment of lasting nature, which is good for at least five seasons of such work. On this amount but 20% depreciation should be figured as an actual cost rather than the full purchase price. Similarly there was in use, equipment to the value of \$3,151.85 purchased in 1927 on which 20% was figured last season and should be figured again this season. On this basis, costs would be shown as:

Total expenditures from allotments & contributed	\$98,403.72
Less equipment cost	<u>11,610.45</u>
	\$86,793.27
Equipment purchase 1927--\$3,151.85 at 20%= 630.37	
" " 1928--11,610.45 at 20%=2322.09	<u>2,952.46</u>
Total actual cost	\$89,745.73

Based on 55,045 trees, cost is \$1.63 per tree.

These are total costs of spotting, treating, overhead, transportation and everything pertaining to the work on the 1928 project, including all contributed time. The figures are probably not exactly accurate and are subject to slight change in the final report. I am quite certain the final report will show no higher. This figure of \$1.79 per tree, including total cost of equipment, compares with the figure of \$2.00 per tree given in last year's report. After figuring depreciation on substantial investment in equipment, the figure of \$1.63 per tree given herein compares with the cost of \$1.78 given in last year's final report.

The gross cost this season was reduced by 10% under 1927 cost, while the net cost figured was reduced by 8½% under 1927 costs.

The job was, perhaps, not handled as efficiently in all ways as it might have been. I have in mind several ways in which improvements may be made if the project is carried on another season. The suggestions offered in Mr. Kircher's memorandum are good and should be considered in our plans for another season. A discussion of such changes as I can see, which would be beneficial, will be given in my final report.